

Claims

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1. Photoactivatable water borne coating composition comprising

a) a (meth)acryloyl-functional polyurethane dispersion, with the (meth)acryloyl-functional polyurethane comprising 5 to 18 wt.% of alkylene oxide groups while the (meth)acryloyl functionality is in the range of 2 to 40, and

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b) a UV-initiator.

2. Water borne coating composition according to claim 1, wherein the (meth)acryloyl-functional polyurethane comprises 8 to 18 wt.% of alkylene oxide groups.

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3. Water borne coating composition according to claim 1, wherein the coating composition comprises a reactive diluent.

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4. Water borne coating composition according to claim 1, wherein the number average molecular weight of the (meth)acryloyl-functional polyurethane is in the range of 1,200 to 8,000.

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5. Water borne coating composition according to claim 1, wherein the equivalent weight of the (meth)acryloyl-functional polyurethane is in the range of 200 to 4,000 g/eq on solid.

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6. Water borne coating composition according to claim 1, wherein the (meth)acryloyl-functional polyurethane is obtainable by reaction of:

a) at least one organic polyisocyanate,

b) optionally, at least one organic compound containing at least two isocyanate-reactive groups and having a number average molecular weight in the range of 400 to 6,000,

- c) at least one isocyanate-reactive and/or isocyanate-functional compound bearing non-ionic dispersing groups,
d) at least one isocyanate-reactive (meth)acryloyl-functional compound,
e) optionally, at least one active hydrogen-containing chain extender, and
5 f) optionally, at least one active hydrogen-containing compound bearing ionic groups.
7. Water borne coating composition according to claim 1, wherein the coating composition comprises an organic polyisocyanate and compounds comprising isocyanate-reactive groups such as hydroxyl groups.
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8. Water borne coating composition according to claim 7, wherein the compound comprising isocyanate-reactive groups is the (meth)acryloyl-functional polyurethane.
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9. Water borne coating composition according to claim 7, wherein either of preceding claims 7 and 8, in that the ratio of the free isocyanate groups to the isocyanate-reactive groups in the coating composition is 0.25-4:1.
- 20 10. Water borne coating composition according to claim 1, wherein the coating composition is a water borne clear coat.
11. Method of coating a substrate which comprises applying a water borne coating composition according to claim 1 to a substrate, causing or allowing
25 the aqueous based carrier phase of the composition to be removed, and curing the surface of the film obtained with UV light.
12. Method of coating a substrate which comprises applying a water borne coating composition according to claim 7 to a substrate, causing or allowing
30 the aqueous based carrier phase of the composition to be removed, curing the surface of the film obtained with UV light, and allowing the unexposed layers to cure thoroughly at room temperature or with heating.

13. Method of coating a metal substrate with a base coat composition and a clear coat composition, the clear coat comprising a (meth)acryloyl-functional polyurethane dispersion having 8 to 18 wt.% of alkylene oxide groups and a UV-initiator.
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14. Method of coating a flexible flooring with a clear coat composition, the clear coat composition comprising a (meth)acryloyl-functional polyurethane dispersion having 5 to 18 wt.% of alkylene oxide groups and a UV-initiator.
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15. Method according to claim 13, wherein the clear coat composition comprises a reactive diluent.
16. Water borne coating composition according to claim 7, wherein the isocyanate-reactive groups are hydroxyl groups.
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